REMARKS/ARGUMENTS

Claims 1-15 are pending. Claim 15 has been amended. Reconsideration is respectfully requested.

1. Rejection of Claim 15 Under §101

Claim 15 stands rejected under 35 U.S.C. 101 because it recites a "computer program product." Claim 15 has been amended to instead recite a "computer-readable medium encoded with a computer program," which the Applicants respectfully submit is statutory subject matter. Approval of claim 15 is requested.

2. Rejection of Claims 1-15 Under §102(e)

Claims 1-15 stand rejected under 35 U.S.C. 102(e) as being anticipated by Ren et al., Object Space EWA Surface Splatting: A Hardware Accelerated Approach to High Quality Point Rendering, Volume 21, Eurographics 20025, pages 461-470 (hereinafter "Ren"). The Applicants assume this rejection should have been made under 102(b) (as Ren is not a patent reference), and respectfully traverse this rejection.

Claim 1 recites a graphics processor that includes:

> a texture space rasterizer for rasterizing a primitive in texture space,
> a color generating unit for determining the color of the output of the texture space rasterizer and for forwarding a color sample along with coordinates,
> a 2-pass screen space resampler for resampling the color sample determined by the color generating unit, and
> at least one one-dimensional blur filter unit associated to at least one pass of said 2-pass screen space resampler for performing a one-dimensional blur filtering before performing said at least one pass.

Ren discloses a multi-pass approach to perform object space EWA (Elliptical Weighted Average) surface splatting for PC graphics hardware, where a two pass rendering algorithm is used to render point-sampled 3D objects. Visibility splatting is performed in the first pass, and view-dependent EWA prefiltering is performed in the second pass. (See Abstract.)

It is respectfully submitted that Ren fails to disclose all the elements of claim 1. Specifically, claim 1 recites that the color generating unit determines the color of the output of the texture space rasterizer and for forwarding a color sample along with coordinates. The Examiner cites to page 462, col. 2, section 3. While this section does disclose that each point is associated with coefficients (w_k^r, w_k^g, w_k^b) that present continuous functions for red, green, and blue color components, there is no apparent disclosure that these coefficients are a forwarded color sample determined by a color generating unit as the color of an output of a texture space rasterizer as recited in claim 1.

Claim 1 further recites a 2-pass screen space resampler for resampling the color sample determined by the color generating unit. The Examiner cites to page 464, col. 1, 1st paragraph, with the first pass being for an opaque polygon and the second pass being for semi-transparent alpha texture. However, the first pass (rendering an opaque polygon for each surfel), which renders a depth image to be used to control the accumulation of the semi-transparent splats in the second rendering pass, does not appear to teach or suggest resampling the color sample determined by the color generating unit (see Section 5.1 on p. 464, and the lack therein of any apparent color sample resampling). The second pass performs surface splatting by rendering textured polygons representing a discrete object space EWA resampling filter (see Section 5.2 on p. 465), and that the splats are evaluated at pixel centers multiplied with the color w_k^r, w_k^g, w_k^b of the current surfel (p. 464, first paragraph). However, there is no apparent disclosure regarding the Ren second pass that teaches or suggests resampling of the color sample determined by the color generating unit.

Additionally, claim 1 recites "a 2-pass screen space resampler." Yet, the two pass approach of Ren involves object space, not screen space:

> "The second pass (Section 5.2) implements Equation (8) as follows: First we set up the *object space* EWA resampling filter..." (p. 464, col. 1, first paragraph, emphasis added);
>
> "In the second rendering pass, we perform surface splatting by rendering textured polygons representing a discrete *object space* EWA resampling filter (7)." (p. 465, col. 1, first paragraph, emphasis added);

> "In the following, we will discuss how to determine the *object space* EWA resampling filter, how to compute the vertex positions of the surfel parallelogram in *object space*, and to choose the optimal size of the alpha texture." (p. 465, col. 1, 3rd paragraph, emphasis added).

Claim 1 further recites at least one one-dimensional blur filter unit associated to at least one pass of said 2-pass screen space resampler for performing a one-dimensional blur filtering before performing the at least one pass. The Examiner cites to page 464, col. 1, 1st paragraph. However, there is no apparent disclosure in the cited text of a blur filter, nor even a suggestion that blur filtering be conducted before performing the at least one pass. The word "blur" or any equivalent disclosure can not be found.

For all of these reasons, it is respectfully submitted that claim 1 is not anticipated by Ren, and that this rejection should be withdrawn. Claim 8 similarly recites the method of claim 1, and claim 15 recites a computer-readable medium encoded with a computer program for performing a method according to claim 8, and thus claims 8 and 15 are considered allowable for the reasons set forth above. Claim 2-7 an 9-14 depend upon claim 1 or claim 8, and are also considered allowable for the reasons set forth above. Additionally, the limitations of these dependant claims are not found in Ren:

- Claims 2-3 and 9-10 recite configurations of multiple one-dimensional blur filter units. No such blur filter units are found in the citations from the Examiner (pp. 464 and 466, Figure 5).
- Claims 4 and 11 recite that the texture space rasterizer is adapted to determine the corresponding shear factor, or the step thereof. There is no apparent contemplation of shear factor determination on cited page 464.
- Claims 5 and 12 recite a delay unit for storing a plurality of color samples to perform an averaging of overlapping color samples in order to determine blurred color samples, or the step thereof. While cited page 467 discloses retrieving colors w_k^r, w_k^g, w_k^b from the input register for the diffuse color, there is no apparent disclosure of averaging overlapping color samples in order to determine blurred color samples.

- Claims 6 and 13 recite the first and second blur filter units are box low pass filters having a footprint determined by the shear factor, or the step thereof. No such disclosure is apparent in the cited Figure 8.
- Claims 7 and 14 recite that the first and second blur filter units are low pass filters having a weighted footprint, or the step thereof. No such disclosure can be found in cited pages 461-462.

It is therefore respectfully submitted that claims 1-15 are not anticipated by Ren, and that this rejection should be withdrawn.

For the foregoing reasons, it is respectfully submitted that the claims are in an allowable form, and action to that end is respectfully requested.

Respectfully submitted,

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